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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,624

10/19/2005

Yuki Takahata

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,624

Applicant(s)

TAKAHATA ET AL.

Examiner

Christian A. Hannon

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is response to applicant's response filed on 10/01/2007. Claims 1-6 & 8-11 are now pending in the present application. **This action is made final.**

Claim Objections

1. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Specifically claims 4 & 5 recite "a flexible circuit board 6," it is believed by the examiner this should be changed to "a flexible circuit board (6)."

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 & 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mellow (US 7,039,206) in view of Hasegawa et al (US 6,421,449), hereinafter Hasegawa.

Regarding claim 1, Mellow teaches a flat panel speaker unit comprising within a frame a transparent diaphragm for outputting sound (Column 1, Lines 43-45; Column 3, Lines 9-14; Mellow), a vibration generating part, input terminals, arranged on the peripheral portion of the diaphragm to directly drive the diaphragm for vibration (Figure 5; Column 3, Lines 20-32; Mellow), a display device disposed inward of the diaphragm, for displaying information (Figure 2, Item 5; Column 2, Lines 39-45; Mellow), the diaphragm and the display device being stacked with a gap, space, there between (Column 2, Lines 39-45; Mellow) so that an image on the display device can be viewed through the diaphragm (Column 1, Lines 43-45; Mellow) and the diaphragm being fixed to the frame by mounting a peripheral portion of the diaphragm onto the frame (Figure 5, Items 22 & 24; Mellow). However, Mellow fails to teach that the generating part includes a coil and a magnet, either one of which is mounted on the diaphragm and the other is mounted to the frame. Hasegawa teaches a vibration generating part (coil in conjunction with a magnet) including a coil (Item 8, Figure 8; Hasegawa) and a magnet (Item 5, Figure 8; Hasegawa), with the coil mounted to the diaphragm and the magnet mounted to a frame (Item 11, Figure 8; Column 1, Lines 18-24; Hasegawa). Therefore it would be obvious to one of ordinary skill in the art as suggested by Mellow (Column 4, Lines 3-8; Mellow), to swap out the particular speaker arrangement for another type in order to benefit from the gained efficiency of the speaker disclosed by Hasegawa.

Regarding claim 2, Mellow and Hasegawa teach claim 1, wherein a plurality of the vibration generating parts is furnished adjacent a peripheral edge of the display device (Figure 2, Items 5 & 7; Figure 5, Item 24; Mellow).

Regarding claim 3, Mellow and Hasegawa teach claim 2, wherein locating nubs, voice coil bobbin, are formed on the peripheral portion of the diaphragm and the coils are fitted onto the locating nubs on a lower face of the diaphragm (Figure 8, Item 9; Hasegawa).

Regarding claim 4, Mellow and Hasegawa teach claim 1, wherein the vibration generating part is arranged outward of the display device (Figure 2, Items 5 & 24; Mellow), a flexible circuit board extending outward of the frame is connected to the display device (Figure 2, Item 9; Mellow) and a through hole is provided in the frame between the display device and the vibration generating part, gap in front cover (Item 10, Figure 2; Mellow).

Regarding claim 5, Mellow and Hasegawa teach claim 4, wherein the flexible circuit board is drawn outside the frame through the frame hole (Figure 2, Items 9 & 10; Mellow).

Regarding claim 6, Mellow teaches a flat panel speaker unit comprising within a frame a transparent diaphragm for outputting sound (Column 1, Lines 43-45; Column 3, Lines 9-14; Mellow) and a vibration generating part for vibrating the diaphragm (Figure 5; Column 3, Lines 20-32; Mellow), a display device disposed inward of the diaphragm for displaying information (Figure 2, Item 5; Column 2, Lines 39-45; Mellow) a central portion of the diaphragm which fully covers an underlying display is thicker than the peripheral portion of the diaphragm to which the vibration generating part is mounted (Column 3, Lines 9-14; Mellow), it is noted that while Mellow teaches a specified thickness approximation, it would be a designers' choice on how thick to make particular

portions of the diaphragm. Mellow does not teach the use of a coil and magnet vibrating portion where the coil of the vibration generating part being coiled more laterally than vertically and causing the diaphragm to vibrate by receiving magnetic flux lines, among the magnetic flux lines emitted from the magnet, that are diagonal or parallel with respect to the diaphragm. Hasegawa teaches use of a vibration unit comprising a magnet and coils wherein the coils of the vibration part are coiled more laterally than vertically, causing the diaphragm to vibrate by receiving magnetic flux lines, which are diagonal to the diaphragm (Column 1, Lines 30-50; Hasegawa). Therefore it would be obvious to one of ordinary skill in the art as suggested by Mellow (Column 4, Lines 3-8; Mellow), to swap out the particular speaker arrangement for another type in order to benefit from the gained efficiency of the speaker disclosed by Hasegawa.

Regarding claim 8, Mellow and Hasegawa teach claim 6, wherein a step is formed at the boundary of the peripheral portion and the central portion of the diaphragm, the step down diagonal slope of figure 8, in Hasegawa.

Regarding claim 9, Mellow and Hasegawa teach claim 6, wherein the central portion of the diaphragm is made thicker than the peripheral portion by attaching a reinforcing plate, dust cap, onto the central portion (Figure 8, Item 14; Hasegawa).

Regarding claim 10, Mellow and Hasegawa teach claim 1, wherein a device comprises the speaker arrangement (Column 1, Lines 6-9; Mellow).

Regarding claim 11, Mellow and Hasegawa teach claim 11, wherein a device comprises the speaker arrangement (Column 1, Lines 6-9; Mellow).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

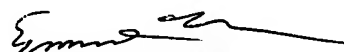
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



C. A. Hannon
November 19, 2007



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